Amendments to the Claims

1.   (currently amended) A computer-implemented method of dynamically modeling and displaying a passage of <u>material or</u> information between at least two spatially distributed objects in a body<u>, comprising</u>:

    <u>creating a first data set of entities between which material or information is transferred;</u>

    <u>creating a second data set of channels connecting the entities;</u>

    <u>creating a third data set of types of material or information that each entity transfers via each channel;</u>

    <u>creating a dynamic map that includes a list of active entities, wherein the dynamic map is communicatively coupled to the active entities so as to provide information thereto;</u>

    <u>using the dynamic map in conjunction with the first, second, and third data sets to perform a simulation of the transfer of material or information between entities; and</u>

    <u>outputting the simulation results.</u>

2. (original) The method of claim 1, wherein at least one spatially distributed object represents at least one of a group selected from: a tissue of the body; and an organ of the body.

3. (original) The method of claim 1, wherein at least one spatially distributed object represents a device used for medical intervention.

4. (original) The method of claim 1, wherein at least one spatially distributed object represents a material introduced into the body by accident.

5. (original) The method of claim 1, wherein at least one spatially distributed object represents material introduced into the body by an aggressor.

6. (original) The method of claim 1, wherein at least one spatially distributed object represents material introduced into the body for cosmetic purposes.

7. (original) The method of claim 1, wherein at least one spatially distributed object is represented as having a spatial form and points of contact with other objects.

8. (original) The method of claim 7, wherein at least one spatially distributed object has a geometrical description of a three-dimensional form.

9. (original) The method of claim 8, wherein the three-dimensional form comprises a polygonal surface representing a spatial boundary.

10. (original) The method of claim 8, wherein the three-dimensional form comprises a specification of points in a grid laid out in three-dimensional space.

11. (original) The method of claim 7, wherein at least one spatially distributed object has a geometrical description of a two-dimensional surface.

12. (original) The method of claim 7, wherein at least one spatially distributed object has a geometrical description of a one-dimensional curve.

13. (original) The method of claim 1, wherein at least one spatially distributed object contains a numerical description of the condition of the at least one spatially distributed object.

14. (original) The method of claim 13, wherein the numerical description comprises lesions of medically recognized types in a tissue represented by the at least one spatially distributed object.

15. (original) The method of claim 13, wherein the numerical description may refer to the states at particular spatial locations within the at least one spatially distributed object.

16. (original) The method of claim 1, wherein a signal passed between a first spatially distributed object and a second spatially distributed object depends upon the

internal state of the first spatially distributed object and the second spatially distributed object, and upon an algorithmic specification characterizing the transfer capacity between the first spatially distributed object and the second spatially distributed object.

17. (original) The method of claim 16, wherein the algorithmic specification is provided with a digital implementation of the method.

18. (original) The method of claim 16, wherein the algorithmic specification is obtained by a user and connected to a digital implementation of the method by programming means.

19. (original) The method of claim 1, wherein at least one spatially distributed object and at least one algorithm governing an internal state of the at least one spatially distributed object are provided with a digital implementation of the method.

20. (original) The method of claim 1, wherein a subset of the at least one spatially distributed object, at least one algorithm governing the evolution of an internal state of the at least one spatially distributed object, and at least one passed signal are constructed by the user and connected to a digital implementation of the method by programming means provided with the digital implementation of the method.

21. (original) The method of claim 1, wherein at least one spatially distributed object is grouped as a different spatially distributed object, and at least one algorithm associated with the different spatially distributed object is run on data associated with the different spatially distributed object to approximate the effect of the at least one algorithm on the data associated with the at least one spatially distributed objects.

22. (original) The method of claim 1, wherein a geometrical description is modified by a global transformation specifying a correspondence between a reference coordinate space of the method and a coordinate space appropriate to a particular subject.

23. (original) The method of claim 1, wherein a geometrical description may be modified individually to better match a corresponding entity in a particular subject to create a new hypothetical example.

24. (original) The method of claim 1, further comprising: specifying the condition of at least one spatially distributed object; running at least one associated algorithm; and reporting the results.

25. (original) The method of claim 1, further comprising: specifying an initial condition of at least one spatially distributed object; running at least one associated algorithm while continuing to intervene in the state of the at least one spatially distributed object in real-time; and observing results.

26. (original) The method of claim 1, further comprising: running at least one associated algorithm on a system that resides on a central server; and having a user issue modification and simulation commands over the Internet which are executed on the central server.

27. (original) The method of claim 1, further comprising: having a user obtain standard system data; and having the user issue modification and simulation commands that are executed on a computer.

28. (original) The method of claim 27, further comprising displaying a three-dimensional graphical image representing a spatial arrangement of at least one spatially distributed object.

29. (original) The method of claim 28, where the three-dimensional graphical image is color-coded.

30. (original) The method of claim 27, further comprising displaying results as numbers.

31. (original) The method of claim 24, where a second program issues modification and simulation commands and receives data describing the results of system computations as input for further computations by said second program.

32. (original) The method of claim 1, wherein the information comprises at least one of a group consisting of: material; and signals.

33. (new) The method of claim 1, wherein the library data set further maintains interaction types and characteristic times for each interaction type.

34. (new) The method of claim 1, further comprising enabling a user to input initial conditions for the entities between which material or information is transferred, and wherein performing the simulation includes using the initial conditions as part of the simulation.

35. (new) The method of claim 1, further comprising enabling a user to input variations of the data sets.

36. (new) The method of claim 1, further comprising creating a data set of the response of each entity to material or information received via each channel.

37. (new) The method of claim 36, wherein creating a data set of the response includes transfer of the same or other material or information to other entities via said channels.

38. (new) The method of claim 1, further comprising creating a data set of the transmission characteristics of each channel for each type of material or information that the said channel can carry.

39. (new) A computer-implemented method of dynamically modeling and displaying a passage of material or information between at least two spatially distributed objects in a body, comprising:

creating a shipper data set that describes the content of material to be shipped;

creating a library data set that includes a catalog of available specifications of shippers;

creating a dynamic map that includes a list of active shippers, wherein the map is communicatively coupled to the active shippers so as to inform each respective active shipper of other active shippers with which the respective active shipper is to contact;

performing a simulation of the passage of material or information between shippers based on the shipper data set, the library data set and the dynamic map; and

outputting the results of the simulation.

40. (new) The method of claim 39, wherein the library data set further maintains interaction types and characteristic times for each interaction type.

41. (new) A computer program embodied on a machine readable medium for dynamically modeling and displaying a passage of material or information between at least two spatially distributed objects in a body, comprising:

code that creates a first data set of entities between which material or information is transferred;

code that creates a second data set of channels connecting the entities;

code that creates a third data set of types of material or information that each entity transfers via each channel;

code that creates a dynamic map that includes a list of active entities, wherein the dynamic map is communicatively coupled to the active entities so as to provide information thereto;

code that uses the dynamic map in conjunction with the first, second, and third data sets to perform a simulation of the transfer of material or information between entities; and

code that outputs the simulation results.